

CLAIMS

*Suht B1* 1. A biologically active heterodimeric human fertility hormone selected from hCG, LH, and FSH, said hormone comprising an alpha subunit and a beta subunit, each said subunit being synthesized by a cell comprising an autonomously replicating expression vector comprising heterologous DNA encoding said subunit.

*W P* 2. The hormone of claim 1, consisting of hCG.

*a* 3. The hormone of claim 1, consisting of LH.

*N f* 4. The hormone of claim 1, consisting of FSH.

*Suht B2* 5. A cell comprising a first autonomously replicating expression vector, said cell being capable of producing a biologically active human fertility hormone selected from hCG, LH, and FSH, said hormone being encoded at least in part by said first expression vector.

*W P* 6. The cell of claim 5, said first expression vector encoding a first subunit of said hormone.

*a* 20 7. The cell of claim 6, further comprising a second autonomously replicating expression vector encoding the <sup>beta</sup> second subunit of said hormone.

*W P* 8. The cell of claim 7, a second subunit of said hormone being encoded by said second vector.

*claim 3*

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*W. P. Shultz & B.*  
9. The cell of claim 7, both subunits of said hormone being encoded by said first expression vector.

*W. P. Shultz & B.*  
10. The cell of claim 5, said first vector being a plasmid.

*W. P. Shultz & B.*  
11. The cell of claim 5, said cell being a mammalian cell.

*Claim 5*  
12. The cell of claim 5, the alpha and beta subunits of said heterodimeric hormone being encoded by said first expression vector.

10 13. The cell of claim 12, transcription of said alpha and beta subunits of said heterodimeric hormone being under the control of the SV40 late promoter.

15 14. The cell of claim 12, transcription of the alpha subunit of said heterodimeric hormone being under the control of the SV40 early promoter, and transcription of the beta subunit of said heterodimeric hormone being under the control of the mouse metallothionein promoter.

20 15. The cell of claim 14, said first vector comprising at least the 69% transforming region of the bovine papilloma virus genome.

25 16. The cell of claim 5, the alpha subunit of said heterodimeric hormone being encoded by said first expression vector and the beta subunit of said heterodimeric hormone being encoded by a second autonomously replicating expression vector.

*JF*

10 11. The cell of claim 16, transcription of the alpha and beta subunits of said heterodimeric hormone being under the control of the SV40 late promoter.

11 12. The cell of claim 10, said cell being a monkey cell.

10 G 13. The cell of claim 16, transcription of the alpha and beta subunits of <sup>said</sup> heterodimeric hormone being under the control of the mouse metallothionein promoter.

Subt 81 14 20. The cell of claim 19, said first and said second vectors each comprising at least the 69% transforming region of the bovine papilloma virus genome.

15 16. The cell of claim 11, said cell being a mouse cell.

Subt 84 21 22. An ~~autonomously replicating~~ expression vector encoding the two different subunits of a human fertility hormone selected from hCG, LH, and FSH.

23. The expression vector of claim 22, said expression vector comprising a plasmid.

24. The expression vector of claim 22, said expression vector comprising a replicating virus.

25. The virus of claim 24, alpha beta SVVPl, ATCC VR 2077.

26. The virus of claim 24, alpha SVHVPl, ATCC VR 2075.

27. The virus of claim 24, beta SVVPl,  
ATCC VR 2075.

28. The expression vector of claim 23, pRF 375  
in C127 cells, ATCC CRL 8401.

*Subt B5* 5  
29. The expression vector of claim 23, pRF 398  
in CL27 cells, ATCC CRL 8401.

30. The expression vector of claim 23, pRF 398  
alpha t<sub>2</sub>, in C127 cells, ATCC CRL 8400.

10 31. The expression vector of claim 23,  
pCL28XhoLHBPV in E. coli, ATCC 39475.

32. The biologically active hormone produced  
by the cell of claim 5.

*Subt. B6*  
15 33. A method for producing a biologically  
active human fertility hormone selected from hCG, LH,  
and FSH comprising culturing host cells comprising a  
first autonomously replicating expression vector  
encoding at least a portion of said hormone.

20 34. The method of claim 33, the first subunit  
of said hormone being encoded by said first expression  
vector and a second subunit of said hormone being  
encoded by a second autonomously replicating expression  
vector comprised in said host cell.

25 35. The method of claim 33, both subunits of  
said hormone being encoded by said first expression  
vector.

*add a12*

*add B7*

*add C8*

*add D9*